Regional Biomass Energy Program
Blueprint For Progress: 2000 - 2005
Clean Bioenergy Technologies for the 21st Century

Introduction

The Regional Biomass Energy Program (RBEP) is a U.S. Department of Energy (DOE) sponsored effort located in five regions of the United States (U.S.). The first regional program was launched in 1979 for several states in the Northwestern U.S.The Congress formally established the RBEP in 1983, and three more regions—the Great Lakes, the Northeast, and the Southeast—were added at that time. A fifth region including the remaining 13 Western states in the continental U.S., was created in 1987. A list of RBEP contacts and the states served by each region is provided on the back cover.

FIGURE 1: RBEP Regional Boundaries

The specific RBEP objective is to increase the production and use of bioenergy resources. As defined by its enabling legislation, the aims of the RBEP are to:

- Improve industry and government planning efforts, particularly assessing current and future biomass resource availability, its use, and applied research needs;

- Encourage economic development through public and private investment in bioenergy technologies, and;

- Support applied research and demonstrate bioenergy technologies on a cost-shared basis, reduce or eliminate market barriers, understand economic and environmental costs and risks, and accelerate the market acceptance of bioenergy technologies.

The RBEP carries out activities related to technology transfer, infrastructure development, industry support, stakeholder relationships, technology development and demonstration, and matching available bioenergy resources to conversion technologies. With an emphasis on technologies best suited to near-term applications, its major focus is the transfer of current, reliable economic and technical information to potential biomass users. The result is a rich variety of strategies and applications of regional biomass resources to meet regional energy needs.

The purpose of this plan is to provide a framework for the RBEP that delineates its goals and objectives for the period from 2000 to 2005. The plan highlights the role RBEP will play in facilitating the continued development of bioenergy technologies and biomass resources at the regional, state, and local level. Each RBEP generally conducts its activities in two interactive arenas.

- Cooperative initiatives with individual state governments match local opportunities with resources and address area-specific problems to find local solutions. Beyond the potential economic development benefits, participating states have the opportunity to strengthen and integrate the work of energy, forestry, air quality, and other relevant offices in promoting bioenergy use. For some regions, the state grant component is a primary method for conducting development and demonstration projects.

- Region-wide technical projects address issues common to the majority of member states. For technical projects, each region seeks active cooperation and cost sharing between the participating states, private industry, trade associations, private farm owners, universities, and other federal agencies. Since its beginning in 1983, the RBEP has been a highly leveraged program. For every federal dollar invested, RBEP partners cost-share at least two dollars.

Program Management

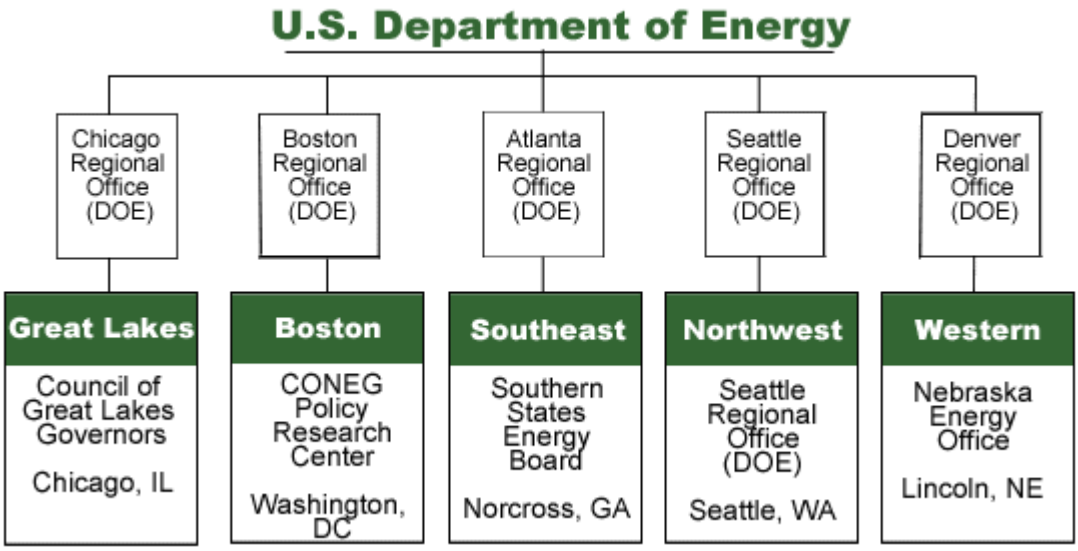
The RBEP is managed and funded by the Office of Fuels Development (OFD) in collaboration with the Office of Biopower and Hydropower Technologies (OBHT). The RBEP works closely with each group in leveraging its resources to facilitate the development of bioenergy technologies and biomass resources.

A key program focus is to complement and help implement the biomass development goals of OFD and OBHT, as well as the other end use sectors in the DOE Office of Energy Efficiency and Renewable Energy (EERE). The program recognizes the role that biomass already plays in meeting energy needs in the industrial and buildings sectors and has worked with government and industrial partners in seeking to augment the use of biomass in these sectors. In working with the various end use sectors, RBEP's efforts are carefully selected to help DOE meet its objectives in reducing U.S. oil import dependence, reducing the emissions of greenhouse gases contributing to global climate change, and creating new employment opportunities.

The RBEP can assist the OFD and OBHT in identifying, developing and implementing special projects that move their technologies from the R&D stage into the marketplace. The RBEPs are in a unique position to facilitate this effort by educating decisions makers at the state and local levels and helping to promote the use of these technologies to the general public.

Each region has a unique program that responds to the specific political and economic needs of the region, reflects the differences in each region’s bioenergy resources, and emphasizes the technologies and projects most appropriate for the region. As a result, the five regional programs have developed their own unique management structure to oversee project activities. Every one of the regional programs has a contact person in each of the states within their region.This allows a close coordination between the regional program and state officials, ensuring responsible management and controls over the selection of relevant projects, as well the transfer of reliable data and information.

FIGURE 2:RBEP ORGANIZATION ROSTER



The Coalition of Northeastern Governors (CONEG) Policy Research Center manages the Northeast Regional Biomass Program. A steering committee consisting of representatives from each of the region's eleven states works closely with the program manager in coordinating program activities. A similar arrangement exists in the Great Lakes region where governor-appointed officials from seven states collaborate with the program managed by the Council of Great Lakes Governors. In the Southeast region, the Southern States Energy Board manages the program where thirteen states, the District of Columbia, Puerto Rico, and the Virgin Islands provide their input through a steering committee. In the Western region, the Nebraska Energy Office manages the program. Coordination within the thirteen states of this region is through a Policy committee on which each state has a representative. A separate Technical Advisory committee provides expertise on major technology areas. Each of these four regions reports to a DOE Regional Office for guidance and administrative management. The Pacific Northwest & Alaska Regional Bioenergy Program is managed by the DOE Seattle Regional Office and works with the input of five state representatives. A sixth state, Hawaii, will be joining that region in 2001.

Roles for Biomass Energy

Both the OFD and the OBHT formulate, execute, and coordinate a balanced and customer-focused national program of applied technology research, development, and demonstration of technologies for the production of transportation fuels and power from biomass resources.

Biomass resources include a wide variety of renewable organic materials, including agricultural wastes, food-processing wastes, and wood residues from paper mills, sawmills, wood products manufacturing, urban tree trimming, and trimmings from forest management practices.In the future, energy crops are expected to significantly expand the biomass resource supply.

The nature of the biomass resource makes it useable as a feedstock for producing transportation fuels, electric power, or thermal energy for a wide variety of industrial and buildings applications.The conversion pathways for the same biomass resource are as diverse as the energy applications that they can serve. This versatility of final use makes biomass a promising resource for a renewable future, but it requires programs charged with the development of bioenergy technologies and resources to operate in several, distinct sectors of energy use.

Two major initiatives now being carried out within the OFD Biofuels Program include the bioethanol project and the biodiesel project. The four major project areas in the OBHT include combustion, co-firing, gasification, and small modular biopower systems. Both OFD and the OBHT support the development of energy crops. The RBEP has helped the OFD and the OBHT facilitate technology implementation and to provide the assistance necessary for biofuels and biopower to become more cost-effective. The individual regions have worked both to lower bioenergy production costs and to increase markets for their use.

Legislation such as the Clean Air Act Amendments of 1990, the Energy Policy Act of 1992, and the 1999 Presidential Bioenergy Initiative have placed the RBEP in a particularly effective position to

foster universities, business, and government collaboration. Of particular interest, the President's Bioenergy Initiative has the objective of making biomass a viable competitor to fossil fuels as an energy source and chemical feedstock while protecting the environment. "Reaching the President's goal has the potential to generate billions of dollars of new income for farmers and diversify and to strengthen the rural economy, producing 50,000 new, high-technology jobs in small processing plants in rural America and up to 130,000 such jobs in the biofuels, biopower, and bioproducts industries.It would also generate 348 million barrels of oil a year, equal to 158 super tankers and would lower the emissions of greenhouse gases by 100 million tons, equal to the amount emitted by 70 million cars." [1] Continuing advances in forest and farm technology, molecular biology, and other areas make this objective achievable, but capturing it will require an unprecedented effort by universities, business, and government.

The RBEP can be of tremendous assistance in helping to reach the initiative's goal of increasing the use of bioenergy and bio-based products three-fold by the year 2010. Among other roles, the RBEP can act as an intermediate between federal R&D programs and affect policies and programs at the state and local level with groups such as energy and natural resource offices, public utility commissions, and soil and water conservation districts. By having a fully developed two-way communication network, the RBEP can also address the individual interests of key target audiences and provide the necessary feedback to the federal government from these state and local groups.

Thus, the RBEP serves in an important intermediary role between federal agencies, particularly DOE, the Department of Agriculture, the Environmental Protection Agency and the regional and state stakeholders in bioenergy development and commercialization efforts. Due to its success, the RBEP has become a model for public sector technology transfer activities and a focal point for an industry that is as diverse as the resources available and the energy needs that it addresses.

Major Changes from the 1997 RBEP Strategic Plan

Planning is one of the integral steps in fulfilling any organization's mission and this plan is the fundamental basis for all RBEP planning efforts. This plan sets the RBEP's long-term directions and policies to be carried out by the five regions for the period 2000-2005. It was developed on a consensus-basis between the regional program managers, their DOE Regional Offices, the OFD, and the OBHT.

The major goals in the current plan are essentially the same as those in the 1997 Strategic Plan. However, the design of the plan has changed significantly. Terminology is now more consistent with the Government Performance and Results Act, P.L. 103-62 (GPRA). Performance indicators are now the common links that tie the RBEP system together, rather than a review of the programmatic activities of any specific region. Measuring performance expands the ideas of "success" from the mere accomplishment of activities to that of delivering desired outcomes and results to customers.

"Based on the complexity of our nation's energy markets, the range of energy technology options that could be pursued, and the need to invest federal resources wisely, it is essential that the EERE programs be carried out with superior corporate management and business acumen…Excellence in business management is essential to accomplishing the EERE mission and goals." [2]

As an EERE component, the RBEP will ensure that the program goals and performance indicators are effectively narrated to its local, state, and regional partners, other DOE programs and other federal agencies through an Annual Operating Plan (AOP). Among other items covered in an AOP, each regional program will perform project studies to help determine how their plans will help meet the performance indicators identified in this blueprint.Among other ways this can be accomplished will be through the preparation of Project Descriptions using a standardized template. The AOP can therefore become a key element in the overall planning process by strengthening the ties and information flow to constituencies with interests affected by the RBEP's initiatives.

Regional Biomass Energy Program Vision

The Regional Biomass Energy Program will be the foremost national link to reliable, objective information and technical assistance on biomass energy, by providing industry, governments, and the public with comprehensive bioenergy solutions to their energy, environmental, and economic problems.

Regional Biomass Energy Program Mission

TheRegional Biomass Energy Program will use its unique state, local, and other networks to provide information, technical and other assistance, to mitigate barriers, to develop and deploy bioenergy technologies for the improvement of regional environment and economies.

Regional Biomass Energy Program Goals for 2000 - 2005

RBEP will provide leadership through education, facilitating, and outreach to achieve the following three goals:

- Provide information, technical and other assistance to enable the increased use of bioenergy technologies.
- Mitigate barriers to the development and deployment of bioenergy technologies.
- Facilitate the development and deployment of cost-effective bioenergy technologies.

Regional Biomass Energy Program Goals, Objectives and Performance Indicators

Goal

1. Provide information, technical and other assistance to enable the increased use of bioenergy technologies.

Objective

1.1 Work with states and other organizations to enhance a communication and information dissemination network that ensures the distribution of bioenergy information.

Performance Indicators

1.1.1 Hold annual regional meetings to educate state specialists and others on the status of bioenergy development.

1.1.2 Establish bioenergy-working groups in at least 35 states.

Objective

1.2 Create partnerships with bioenergy developers and provide links to policy, regulatory, or technical assistance for the development of bioenergy production.

Performance Indicator

1.2.1 Create 50 partnerships and provide a semi-annual report on type of partnership service provided and the service results.

Objective

1.3 Serve as an objective source of bioenergy information to the public and private sector, and continue to develop a variety of information resources to address bioenergy issues.

Performance Indicators

1.3.1 Establish web pages for all five Regional Programs, with consistent information and linkages.

1.3.2 Develop and maintain a Headquarters RBEP web page that is hot-linked to the five regional RBEP web pages.

1.3.3 Maintain a list of RBEP state contacts on each RBEP web page, updated every three months.

1.3.4 Install “suggestion boxes” at Internet sites for user feedback.

1.3.5 Establish requirements for program documents that allow virtually all-new documents to be posted on the RBEP Internet sites.

1.3.6 To the extent possible, make all key historical RBEP reports available via the Internet.

Objective

1.4 Educate policy makers, agricultural interests, builders, facility owners, the environmental community, and universities on bioenergy issues by providing speakers and other educational resources.

Performance Indicators

1.4.1 Create a means to receive feedback on barriers to expanding the use of bioenergy in public and private systems by presiding over at least 50 stakeholder meetings, technology specific workshops, or peer-exchange events.

1.4.2 Host regional and national conferences, symposia, or roundtables to bring together researchers, industries, the agricultural community, end users, and others.

1.4.3 Work with state officials to foster the inclusion of bioenergy in ten or more state greenhouse mitigation plans.

1.4.4 Work with state officials to foster the inclusion of bioenergy as officially accepted renewable fuels in the “renewable portfolio standards” of seven or more states.

1.4.5 Identify cross-regional issues and policies, and test two or more mechanisms for jointly addressing common concerns (e.g., mechanisms such as joint workshops, working groups, document sharing via the Internet, special committee meetings at conferences, or video conferences).

Objective

1.5 Disseminate information to enable the broad use of energy crops.

Performance Indicator

1.5.1 Hold 100 field days or related events at energy crop sites.

Objective

1.6 Integrate information and experience gained from regional efforts into the overall OFD Communications Plan.

Performance Indicator

1.6.1 Serve as a member of the OFD Communications Team, participating in monthly meetings.

Goal

2. Mitigate barriers to the development and deployment of bioenergy technologies.

Objective

2.1 Support regional bioenergy networks.

Performance Indicators

2.1.1 Seek an average programmatic cost-share of at least 1:1; that is, for every $1 of RBEP funds invested, partners will cost-share $

2.1.2 Provide state bioenergy program grants or other means of support according to the regional steering committees and management practices.

Objective

2.2 Identify and address the non-technical barriers to the deployment of bioenergy technologies.

Performance Indicators

2.2.1 Conduct surveys of committee members and the targeted shareholders to identify non-technical barriers (i.e., environmental, financial, regulatory, permitting). Based on survey results, develop region-specific action plans.

2.2.2 Support at least eight annual workshops or conferences that address non-technical bioenergy opportunities or issues.

2.2.3 If funding permits, annually solicit state projects to address non-technical barriers.

Objective

2.3 Assess and characterize selected biomass resource data for bioenergy applications as needed.

Performance Indicators

2.3.1 In response to specific requests, perform or solicit biomass resource assessments (could include info updates, site or project specific, or technology specific).

Objective

2.4 Create awards and recognition opportunities for work in bioenergy.

Performance Indicators

2.4.1 Present awards at Bioenergy conference; develop a standardized process for identifying and selecting national and regional recipients.

2.4.2 Publicize and recognize recipients through press releases, photo ops, and placed media stories.

2.4.3 Identify potential biopower participants and assist them in applying for Green-E certification.

2.4.4 Assist in planning or publicizing eight or more bioenergy ground breakings, roll-outs, or success stories each year.

Goal

3. Facilitate the development and deployment of cost-effective bioenergy technologies.

Objective

3.1 Support the use of energy crops and the technologies for harvesting and handling.

Performance Indicators

3.1.1 Demonstrate the potential of using six emerging energy crops or energy crops in new locations in close collaboration with ORNL.

3.1.2 Select and evaluate six technologies for harvesting and handling energy crops.

Objective

3.2 Encourage the use of low-value biomass feedstocks, such as animal manures, agricultural and forest residues, and solid waste for bioenergy applications.

Performance Indicators

3.2.1 Assist in the deployment of 25 bioenergy projects using low-value biomass feedstocks.

3.2.2 Work with ORNL and NREL in developing a National Resource Assessment Plan

methodology.

Objective

3.3 Work with industry to develop and commercialize biopower systems, including co-firing, cogeneration, gasification, modular power systems, and other technologies.

Performance Indicators

3.3.1 Co-fire up to 20% wood waste in two industrial or utility boilers that generate 50-mW of electricity or equivalent heat.

3.3.2 Create six industry partnerships demonstrating the potential to commercialize biopower systems.

Objective

3.4 Work with industry to develop and commercialize biofuels, including ethanol, bio-based diesel, and other technologies.

Performance Indicators

3.4.1 Assist in implementing the production of 80 million gallons per year of new ethanol production capacity.

3.4.2 Facilitate establishing 10 bio-based diesel fuel production facilities.

3.4.3 Introduce ethanol and biodiesel as alternative fuels in at least eight National Parks annually.

3.4.4 Determine whether a major effort to foster oxy-diesel deployment is warranted by testing the fuel to establish its environmental and economic merits.

3.4.5 Field test Aquanol (70% ethanol, 30% water) in an over-the-road demonstration project using a modified conventional diesel truck.

Objective

3.5 Increase the acceptance and use of biopower and bio-based fuels.

Performance Indicators

3.5.1 Assist 20 commercial, industrial, and institutional facilities with the installation of biopower systems.

3.5.2 Conduct 20 workshops addressing opportunities for new cellulose to ethanol technology commercialization, reaching over 400 decision-makers.

Conclusion

The importance of positive, supportive attitudes towards bioenergy use is one of the vital "lessons learned" by the RBEPs in developing the industry. Developing positive attitudes toward bioenergy use is based on credible information, public education, and sound technology demonstration. Information regarding the economic and environmental advantages of bioenergy use, resource data and capacity assessments, and the potential applications for new products and technologies made from biomass still needs to be widely shared with a variety of audiences.

Of all of DOE’s programs, the RBEP is positioned closest to the ultimate bioenergy customer. Therefore, the RBEP is ideally suited to act as a bridge, helping translate customer needs to OFD and OBHT and bringing innovative solutions from the laboratory to commercial application.

The RBEP serves as a critical link in furthering bioenergy development.With its five regional programs and agency contacts, RBEP offers a well-connected national network of expertise for serving regional and local needs. Over the next five years, RBEP plans to build on its successes in communicating information to key constituency groups, leveraging private and public resources, and facilitating the demonstration of innovative technologies and processes for efficiently utilizing biomass resources for

energy applications.

[1]The White House, Office of the Press Secretary. 13 January 2000.*President Clinton's FY 2001 Budget Accelerates the Development and Use of Bio-Based Technologies.*

[2]U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy.2000. *Clean Energy for the 21st CenturyStrategic Plan*. USDOE, Washington, D.C.

[Biofuels] [Biopower] [Bioenergy Feedstock Development] [EREN Bioenergy Topics]
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